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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,548	06/30/2000	Lincoln Dale	CISCP171	2364
22434	7590	08/10/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778			CHOUDHARY, ANITA	
			ART UNIT	PAPER NUMBER
			2153	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/608,548

Applicant(s)

DALE ET AL.

Examiner

Anita Choudhary

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed on May 13, 2004 has been entered. Claims 1, 10, 15, 24 and 29-32, have been amended and are presented for further examination.

Claims 1-40 are presented.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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Claims 1, 10, 15, 24, and 29-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Basilico (US 6,243,360).

In referring to claims 1, 15, 29, and 31, Basilico shows a system for dynamically load balancing packets in a network switch to a plurality of network interface cards. Basilico shows:

Receiving a packet (col. 4 lines 18-28);

Inputting at least a portion (e.g. destination address field 38) of the packet into a content addressable memory (col. 5 line 8-16);

Obtaining a result (code) from the content addressable memory (CAM) to indicate whether to redirect the received packet to a selected processing device and to indicate to which processing device selected from among the plurality of processing devices the received packet is to be redirected (code embedded in header, see fig. 5B, step 506) if the CAM also indicates that the received packet is to be redirected, wherein the CAM is configured to distribute received packets to the plurality of processing devices (NIC's, 20) based on a load balancing technique (col. 3 lines 40-48, col. 5 lines 16-30) Basilico shows in figure 1 workstations (12) sending packets to LAN switch (10) and a plurality of destination processing devices NIC's (22). Upon receiving a packet from workstation the LAN switches implements a CAM memory look up table for mapping the destination to one of a plurality of NIC's by pre-pending the header with the destination port number from the table. The table in the CAM is able to dynamically route to another NIC if an indicated NIC has failed or is busy. This uses dynamic load balancing technique. The header pre-pended to the packet functions as an indicator supplied by the CAM table for redirecting to a functioning destination NIC.

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redirecting the received packet to the selected processing device when the CAM indicates to redirect the received packet (col. 5 lines 24-27, note that the redirecting to another NIC when a destination is busy the switch/CAM implements dynamic load balancing technique); and

sending the received packet to a destination indicated by the received packet when the CAM does not indicate to redirect the received packet (step 512, col. 6 lines 10-15, note that when the destination is not busy, the packet is directed towards original destination).

In referring to claims 10, 24, 30, and 32, similar to claim 1 (see above), Basilico show each entry in CAM including a set of bit values that correspond to at least a portion of a packet and each entry including one or more destination fields indication where to send a packet that matches the entry's set of bit values (col. 5 lines 8-23) and indicating whether to redirect the packet from the destination indicated by the packet (header indicating group of header output ports allows the packet to redirect to any of the available destinations indicated in the group passed on load or failures, step 512, col. 6 lines 10-14 and col. 3 lines 40-48), wherein the CAM is configured to distribute received packet to the plurality of processing devices based on a load balancing technique (col. 5 lines 24-36).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 2-4, 6, 11, 12, 16-18, 20, 25, 26, 33-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basilico in view of Yates et al (US 6,167,438).

In referring to claim 2, 16, and 33, although Basilico shows substantial features of the claimed invention, Basilico does not show a *wherein the selected device is selected from a plurality of cache systems*. Nonetheless this feature is well known and would have been an obvious modification to the system shown by Yates.

In an analogous art, Yates shows a method for a router distributing client requests to a cache server system (16) selected from a plurality of cache storages (18). Yates includes a method for redirecting client request to the cache systems. This determination is made at the router using filters (col. 7 lines 46-56)

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Basilico to employ the features shown by Yates in order to improve and reduce redundancy of data delivery and access (see col. 5 lines 21-24).

In referring to claims 3, 17, and 34, Yates shows results indicate to redirect the packet from being sent to a destination specified in the received packet (col. 7 lines 39-42).

In referring to claims 4, 12, 18, 26, and 35, Yates shows result includes a processing device identification corresponding to the selected device (18) to which the received packet is to be sent (col. 7 lines 36-42).

In referring to claims 6, 20, and 37, Basilico shows portion of received packet is input into the CAM is selected from a group consisting of a destination address, a destination port, source port, and a protocol (fig. 2, col. 4 lines 36-51, col. 5 lines 5 liens 12-15).

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In referring to claims 11 and 25, Yates shows destination field includes an action field indicating whether to redirect the packet from a destination indicated by the packet itself (col. 7 lines 39-42).

Claims 5, 7-9, 13, 14, 19, 21-23, 27, 28, 36 and 38-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Basilico in view of Yates et al. and in further view of Nataraj et al (US 6,154,348).

In referring to claims 5, 14, 19, 28, and 36, although the combined teachings of Basilico and Yates show substantial features of the claimed invention, as discussed above, it fails to disclose *ternary CAM*. Nonetheless, this feature is well known in the art and would have been an obvious modification to the system shown by Basilico and Yates as evidenced by Nataraj.

In an analogous art, Nataraj shows a method for comparing bit values and a matching transistor determining the match state. Nataraj shows ternary CAM for carrying out these memory comparisons.

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Basilico and Yates to employ the features shown by Nataraj in order to increase overall speed of comparison functions and decrease power drain (see col. 2 lines 53-58).

In referring to claim 7, 21, and 38, Basilico shows CAM entry includes bits-to-match field (see fig. 3, "56" header), an action field and redirection destination field (output port, 66).

In referring to claim 8, 22, and 39, Yates shows redirection destination field identifies a cache system (col. 7 lines 39-41).



In referring to claims 9, 23, and 40, Yates shows action field indicates whether the received packet is to be redirected (col. 7 lines 48-56).

In referring to claims 13 and 27, Nataraj shows a set of bit values include at least a 1 or a 0 value and a don't care value (col. 1 lines 36-39).

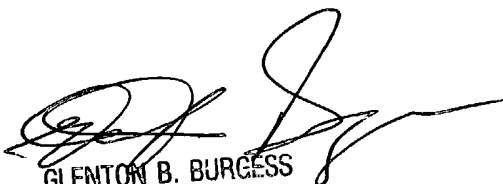
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita Choudhary whose telephone number is (703) 305-5268. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC  
July 28, 2004

  
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